NoName Group Draft Toolbox Measures

Tool	Not inconsistent w/ CALFED	Stakeholder support	Assurances Potential	Availability of funding	Cost	Implement ability	Time Frame	Mitigation potential
Near-term tools								
Banks PP permit to 10,300 cfs	+		o	o	low	+,o	0-2 yrs	+
S. Delta facilities with new screened intake of 5,000 to 7,000 cfs capacity at CCFB	+		+	o	ref: CALFED costs for screens	+,o	0-2 yrs	+
JPOD (ref. SWRCB alternatives, unlimited)	+		o	o	wheeling costs	+,o	0-2 yrs	+
DMC / Calif. Aqueduct intertie	+,o		+	o	$12-15M, $20/AF	+,o	2-4 yrs	+
Madera Ranch	+		o	o	$110-125 million, 40% land / 60% facilities, $150-175/AF total	+,o	3-5 yrs	+
Other Near-term tools								
Kern Waterbank:								
Reschedule SWP deliveries	+		+	o	$25-50/AF	+	0-2 yrs	+
Pre-deliver to groundwater	+		+	o	$110-175/AF	+	0-2 yrs	+
Semitropic expansion	?		+	o	$200-$300/AF	+	0-2 yrs.	+
MWD demand shift	+		+	o	$25/AF for same yr, $50-75/AF for multi yr.	+	0-2 yrs.	+
Exchanges involving the Cross Valley Canal	+		+	o	?	+,o	0-4 yrs	+
Variable pumping at Tracy PP	+		+	o	?	+	1-5 yrs	+

Tool	Not inconsistent	Stakeholder	Assurances	Availability	Cost (1)	Implement	Time	Mitigation

	w/ CALFED	support	Potential	of funding		ability	Frame	potential

Market acquisition of water/incentives

Purchase reduced demand (2)								
Long-term deals for long term water purch.	+	?(3)	o	o	?	o+	3-5 yrs	o
Long-term deals for short term options	+	?	o	o	?	o+	3-5 yrs	o
Short-term purchase program	+	?	+	o	?	+	1-3 yrs	+
Project water purchases: Purchase USBR 215 water Purchase DWR interrptible water Purchase turnback water	+	+, conditional on timing of pumping	o-	o	10-20/AF	+, but only if storage can be accessed	1-2 yrs	+
Purchase releases from hydro producers	?+	- (4)		o	?	o-	3-5 yrs	o-
Time-based pricing (5)								
Incentives for GW banking and exchange	+	o, depends on Ops	+	o	?	o-	3-5 yrs	+
Acquisition of level 4 refuges supplies for banking (6)	+	+	+	o	?	+	1-3 yrs	+
Increased usage of Colorado R. water via conj. use or financial incentives (7)	+	+	NA	+	?	-	3-5 yrs	+
Upstream purchases (w/ or w/o operational shifts)	+	?	+ short term, o long term	o	?	+ short term, o long term	1-3 short, 3-5 long	o

1) Many of these costs may be estimated in the CVPIA PEIS
2) Assumed to be environmental purchases south of the Delta only. Purchases by water users are already ongoing
3) Stakeholder support contingent upon structure of CALFED water transfer package.
4) Assumed opposition from downstream users, recreational interests, and some environmentalists
5) Covered by incentives for GW banking and level 4 water categories. Therefore not scored.
6) Unclear. Assumed involves placement of level 4 water into storage ahead of schedule.
7) Not clear what CALFED could add to existing purchases. Assumed that intent is to retain full aqueduct.

Tool	Not inconsistent w/ CALFED	Stakeholder support	Assurances Potential	Availability of funding	Cost (1)	Implement ability	Time Frame	Mitigation potential

Reop'ed, shifted, conj. use, existing storage

CCSF / SCVWD Exchanges	+				$10M for 60cfs interconnection		3 yrs.	+
Mendota Pool pumping shifts	+				low (ref: CVPIA toolbox group)	o	0-2 yrs.	could enhance SJR flow
Los Vaqueros	+		o	o	low	o	0-2 yrs.	o
American Riv. Exchanges				o				
Amer. Riv. / Mok. Riv.	+		o	o	$138/AF for EBMUD water + wheeling	o (over and above FSC connectn, no sig. hurdles if supported by enviros.)	5 yrs.	+
Amer. Riv. to SSJID/OID	+		o	o	$138/AF for EBMUD water + whling + $83-105M for pipe	- (strong local opposition)	5/6+	?
Folsom So. Canal GW/East SJ exchange	+		o	o	$103M cap. + convey?	?	5/6+	?
~~Alameda Co. GW banking / conj. use~~	No programs currently under consideration						0-3 yrs.	
~~San Luis Reservoir (re-operation)~~	(probably incorporated within the other reop, shift, actions							

New Groundwater Storage

Gravelly Ford Project (?)					?		1-3 yrs	
Contra Costa GW banking/conj. use	Feasibility studies underway. Not enough known at this point to evaluate						>4 yrs	

Tool	Not inconsistent w/ CALFED	Stakeholder support	Assurances Potential	Availability of funding	Cost (1)	Implement ability	Time Frame	Mitigation potential

New Surface Storage

In-Delta Storage (e.g., Delta Wetlands)	+		o	o	?	o	2-4 yrs.	o
Raise Shasta Dam	+		o	o	?	o	3-7yrs	o
Raise Friant Dam	+	Too far out to evaluate ----------					>7 yrs	
Expansion of Pacheco Res.	+	Too far out to evaluate ----------					>7 yrs	
Pine Flat companion reservoir	o	Too far out to evaluate ----------					>7 yrs	

Other modification of operating pattern tools

Exchanges not using Ops Group - unbalanced exchanges	+							
Exchanges for water quality	+							
Reschedule water or shifting to GW to get past low point in San Luis	+							
Real-time operations with crediting (adaptive exports limits)	+							
Friant-Kern/ Calif. Aqueduct intertie	+							
Contributions from other CVP contractors and other water users to meet enviro. objectives	+							
Recirculation	+							
Temporary storage of drainage water	+							
Desalination	+							
Expansion of Delta Cross Channel	+							
Central Delta intake	+							
Fullerton exchange proposal	+							

Tool	Not inconsistent w/ CALFED	Stakeholder support	Assurances Potential	Availability of funding	Cost	Implement ability	Time Frame	Mitigation potential

Removal of smaller reservoirs/dams for ecosystem access

Battle Creek	+		+	o	$ 12 M		Depends on negot. w/ stkhldrs	+
Englebright	+		+	o	$ 14.7 M		Depends on negot. w/ stkhldrs	+

Procedural Tools

COA revisions								
Review upstream responsibility to reflect shifted CVP/SWP burdens since the Accord								
Section 1707: Dedication of instream flows for enviro. purposes and/or Delta outflow								
~~CVPIA yield augmentation~~								

Combination Tools

VAMP: modification of WQCP flows + acquisition of water through market and non-market means								
b(2)/b(3) water: Flexibility between the two to meet fish objectives								

Tool	Ecosystem Benefits	Water Supply Benefits	Water Quality Benefits
Near-term tools			
Banks PP permit to 10,300 cfs	+(could alter export timing),o (could increase take)	Now 118 TAF avg, 71 TAF in crit. yr.	o
S. Delta facilities with new screened intake of 5,000 to 7,000 cfs capacity at CCFB	+(could reduce take)	could allow projects to export more if take is reduced	o
JPOD (ref. SWRCB alternatives, unlimited)	+(could alter export timing),o (could increase take)	0-175 TAF depending on alts	o
DMC / Calif. Aqueduct intertie	+(could alter export timing),o (could increase take)	max. capacity is about 180AF/yr	o
Madera Ranch	+(could alter export timing)	350 TAF available storage cap., 400 cfs put, 200 cfs take capacity	depends on export ops rules and timing and extraction quality
Other Near-term tools			
Kern Waterbank:			
Reschedule SWP deliveries	+(alter export timing)	50-100 TAF/yr shift (AN, Wet)	o, depends on ops
Pre-deliver to groundwater	+(alter export timing)	?	o, depends on ops
Semitropic expansion	+(alter export timing)	0-200 TAF of avail. storage	o, depends on ops
MWD demand shift	+(alter export timing)	50-100 TAF shift	o, depends on ops
Exchanges involving the Cross Valley Canal	+(alter export timing)	?	o, depends on ops
Variable pumping at Tracy PP	+(could alter export timing),o (could increase take)	?	o, depends on ops

Tool	Ecosystem	Water Supply	Water Quality

	Benefits	Benefits	Benefits

Market acquisition of water/incentives

Purchase reduced demand (2)			
Long-term deals for long term water purch.	+	0 TAF	+ (12)
Long-term deals for short term options	+	0 TAF	+
Short-term purchase program	+	0 TAF	+
Project water purchases: Purchase USBR 215 water Purchase DWR interrptible water Purchase turnback water	o+ (8)	get from models, < 100 TAF.	o
Purchase releases from hydro producers	? (9)	?	o
Time-based pricing (5)			
Incentives for GW banking and exchange	+	?	o+, could reduce salt laoding
Acquisition of level 4 refuges supplies for banking (6)	?	< 250 TAF	o
Increased usage of Colorado R. water via conj. use or financial incentives (7)	+	? < 4.4 MAF- rights	?
Upstream purchases (w/ or w/o operational shifts) (10)	o (11)	?	o+ depends on details

8) Low impact at worst. If dedicated for enviro. benefits e.g., to produce diversion timing shift, then positive
9) Depends on operations, when water is moved, etc...
10) Implementability of transfers will depend on the details. SOD to SOD transfers may have few problems. NOD to SOD transfers may be more problematic. All else being equal, short term transfers are easier
11) Possible benefits if purchased for the environment
12) If purchases in drainage problem areas.

Tool	Ecosystem Benefits	Water Supply Benefits	Water Quality Benefits

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Reop'ed, shifted, conj. use, existing storage

CCSF / SCVWD Exchanges	? (higher SJR flow)	0-30 TAF shift (SCVWD to check)	o, could enhance SJR flows
Mendota Pool pumping shifts		20-45 TAF shift	
Los Vaqueros	+(alter export timing)	5-15 TAF/yr	
American Riv. Exchanges			
Amer. Riv. / Mok. Riv.	+, could enhance Mokelumne flows for fish	o, neutral	+, o may provide better quality in S. and Central Delta if Mokelumne flows are increased
Amer. Riv. to SSJID/OID	+, could enhance Stanislaus flows for fish	+,?, could help supply upstream of Vernalis if Vernalis WQ objective is met w/ less flow	+, may provide better quality in S. Delta if Stanislaus flows are increased
Folsom So. Canal GW/East SJ exchange	?	?	?
Alameda Co. GW banking / conj. use		? - might not be viable	
~~San Luis Reservoir (re-operation)~~			

New Groundwater Storage

Gravelly Ford Project (?)		?	
Contra Costa GW banking/conj. use		TBD	

Tool	Ecosystem Benefits	Water Supply Benefits	Water Quality Benefits
New Surface Storage	o,depends on	approx. 100 taf/yr (long-term)	

In-Delta Storage (e.g., Delta Wetlands)	o, depends on ops and mitigation programs	200-250 TAF cap., yield: <100 TAF long-term, 0-50 TAF in crit.year, depends on ops. Revised program and ops may change yield	o, depends on ops
Raise Shasta Dam	+, could be used for instream flows and temp. control	>0, but unknown, depends on ops., and size of enlargement	
Raise Friant Dam		>0, but unknown, depends on ops.	
Expansion of Pacheco Res.		>0, but unknown, depends on ops., could help all San Luis Res. users	
Pine Flat companion reservoir		>0, but unknown, depends on ops.	

Other modification of operating pattern tools

Exchanges not using Ops Group - unbalanced exchanges		depends on ops rules	
Exchanges for water quality		depends on ops rules	
Reschedule water or shifting to GW to get past low point in San Luis		50-100 TAF in wetter years	
Real-time operations with crediting (adaptive exports limits)		100's TAF?	
Friant-Kern/ Calif. Aqueduct intertie		depends on ops rules	
Contributions from other CVP contractors and other water users to meet enviro. objectives			
Recirculation		about 100 TAF	
Temporary storage of drainage water		<20 TAF	
Desalination		?	
Expansion of Delta Cross Channel		depends on ops rules	
Central Delta intake		depends on ops rules	
Fullerton exchange proposal		small	

Tool	Ecosystem Benefits	Water Supply Potential/Benefits (yield/cap/shifted)	Water Quality Benefits

Removal of smaller reservoirs/dams for ecosystem access

Battle Creek	# miles of habitat TBD	x miles of habitat, dams not currently used for flood control or supply (?)	o
Englebright	# miles of habitat TBD	y miles of habitat, dams not currently used for flood control or supply (?)	o

Procedural Tools

COA revisions			
Review upstream responsibility to reflect shifted CVP/SWP burdens since the Accord			
Section 1707: Dedication of instream flows for enviro. purposes and/or Delta outflow			
CVPIA yield augmentation			

Combination Tools

VAMP: modification of WQCP flows + acquisition of water through market and non-market means			
b(2)/b(3) water: Flexibility between the two to meet fish objectives			

Tool	Ecosystem Impacts	Water Supply Impacts	Water Quality Impacts	Unresolved issues
Near-term tools				
Banks PP permit to 10,300 cfs	+/o, could increase or increase take, depending on ops rules	+	+	ops rules
S. Delta facilities with new screened intake of 5,000 to 7,000 cfs capacity at CCFB	+	+	+	ops rules
JPOD (ref. SWRCB alternatives, unlimited)	+/o, could increase or increase take, depending on ops rules	+	+	ops rules
DMC / Calif. Aqueduct intertie	+/o, could increase or increase take, depending on ops rules	+	+	relation to JPOD
Madera Ranch	o, would require local mitigation for terrestrial species, but could provide wetland habitat	+	+	
Other Near-term tools				
Kern Waterbank: Reschedule SWP deliveries Pre-deliver to groundwater	 + +	 + +	 + o, extracted wq?	
Semitropic expansion	+	+	o, extracted wq?	Current storage available
MWD demand shift	+	+	o, extracted wq?	
Exchanges involving the Cross Valley Canal	+	+	+	
Variable pumping at Tracy PP	+/o, could increase or increase take, depending on ops rules		+	

Tool	Ecosystem	Water Supply	Water Quality	Unresolved

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	Impacts	Impacts	Impacts	issues (13)

Market acquisition of water/incentives

Purchase reduced demand (2)				
Long-term deals for long term water purch.	+	+, assuming	neutral	
Long-term deals for short term options	+	no injury	neutral	
Short-term purchase program	+	rule	neutral	
Project water purchases: Purchase USBR 215 water Purchase DWR interrptible water Purchase turnback water	o	+	neutral	
Purchase releases from hydro producers	o	o-	o, depends on ops	
Time-based pricing (5)				
Incentives for GW banking and exchange	+	+	neutral	
Acquisition of level 4 refuges supplies for banking (6)	+	+	neutral	
Increased usage of Colorado R. water via conj. use or financial incentives (7)	+	+	-	
Upstream purchases (w/ or w/o operational shifts)	o	+, assuming no injury rule	could be negative, depends on ops	

13) see footnotes throughout.

Tool	Ecosystem Impacts	Water Supply Impacts	Water Quality Impacts	Unresolved issues (13)

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Reop'ed, shifted, conj. use, existing storage

CCSF / SCVWD Exchanges	+	+		
Mendota Pool pumping shifts	+	+	o, extracted wq?	overdraft problem?
Los Vaqueros	+	+	+	CCWD assurances
American Riv. Exchanges				
Amer. Riv. / Mok. Riv.	+	?	+	enviro support must be evaluated, water supply impacts/benefits must be evaluated
Amer. Riv. to SSJID/OID	+	?	+	local support must be evaluated, water supply impacts/benefits must be evaluated
Folsom So. Canal GW/East SJ exchange				
Alameda Co. GW banking / conj. use				
~~San Luis Reservoir (re-operation)~~				

New Groundwater Storage

Gravelly Ford Project (?)				need project description
Contra Costa GW banking/conj. use				

Tool	Ecosystem Impacts	Water Supply Impacts	Water Quality Impacts	Unresolved issues (13)

New Surface Storage

In-Delta Storage (e.g., Delta Wetlands)	o	+	o	storage of water on peat soils and wq impact
Raise Shasta Dam	Too far out to evaluate ----------			
Raise Friant Dam	Too far out to evaluate ----------			
Expansion of Pacheco Res.	Too far out to evaluate ----------			
Pine Flat companion reservoir	Too far out to evaluate ----------			

Other modification of operating pattern tools

Exchanges not using Ops Group - unbalanced exchanges				ops rules
Exchanges for water quality				
Reschedule water or shifting to GW to get past low point in San Luis				
Real-time operations with crediting (adaptive exports limits)				ops rules
Friant-Kern/ Calif. Aqueduct intertie				
Contributions from other CVP contractors and other water users to meet enviro. objectives				Eastside supply reduction
Recirculation				VAMP conflict
Temporary storage of drainage water				
Desalination				
Expansion of Delta Cross Channel				
Central Delta intake				
Fullerton exchange proposal				

Tool	Ecosystem Impacts	Water Supply Impacts	Water Quality Impacts	Unresolved issues

Removal of smaller reservoirs/dams for ecosystem access

Battle Creek	+	probably small	+	negotiations w/ locals
Englebright	+	probably small	+	negotiations w/ locals

Procedural Tools

COA revisions				
Review upstream responsibility to reflect shifted CVP/SWP burdens since the Accord				
Section 1707: Dedication of instream flows for enviro. purposes and/or Delta outflow				
CVPIA yield augmentation				

Combination Tools

VAMP: modification of WQCP flows + acquisition of water through market and non-market means				
b(2)/b(3) water: Flexibility between the two to meet fish objectives				